Method and device for introducing liquid into an exhaust-gas purification system

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Nitrogen oxides emitted by an internal-combustion engine operated with excess air are normally converted by the method of selective catalytic reduction by bringing the nitrogen oxides, together with ammonia, into contact with a selective catalyst. Due to the dangers associated with the use of ammonia, in a motor vehicle ammonia should only be carried in the form of a substance which liberates ammonia, generally an aqueous urea solution. A method and a device for introducing liquid into an exhaust-gas purification system according to the invention avoids frost damage to sections of the system during shutdown times and permits operation of the system at temperatures below the freezing point of the reducing agent solution being used. The method and device include a (thermally insulated) reservoir for the reducing agent liquid and a liquid supply line which is connected thereto and terminates in an outlet opening for the liquid. The reservoir and the liquid supply line can be heated. Furthermore, a heater is provided for liquefying a starting volume which is small as compared with the volume of the reservoir. The liquid supply line may also have a back-flush valve to which a gas that is under pressure can be applied. The supply line can consequently be blown free.